

Appendix I Methods for Deicing

I-1. Gate Wall Heaters

The Omaha District is currently (April 1997) producing drawings and specifications for gate wall heaters for the spillway tainter gates at Gavins Point Dam. Ice formations on the downstream side of the gates frequently prevent the gates from being lifted. The gate wall heaters which were previously installed were metal sheathed plastic with imbedded heating elements. They worked well in preventing ice from bridging between the gates and the gate walls. However, the heating elements have begun to fail. The new heaters will be of metal construction with replaceable heating elements (Figure I-1).

I-2. Aircraft Deicer

a. Demonstration. A truck-mounted aircraft deicer having an extendable, articulated boom and personnel basket, was used in a deicing demonstration in 1985 at the Gerald Gentleman Power Station located near Sutherland, Nebraska. Observers from the Omaha District were present. An 8-ft-high x 8-ft-wide x 2-ft-thick ice formation was cut from a concrete structure in about 30 minutes (rather than being melted away in its entirety). The nozzle was adjusted to spray a narrow stream of 200° F water at about 30 gpm. The operator was only a few feet away from the ice.

b. Application. The observers concluded this type of equipment would be applicable for deicing the

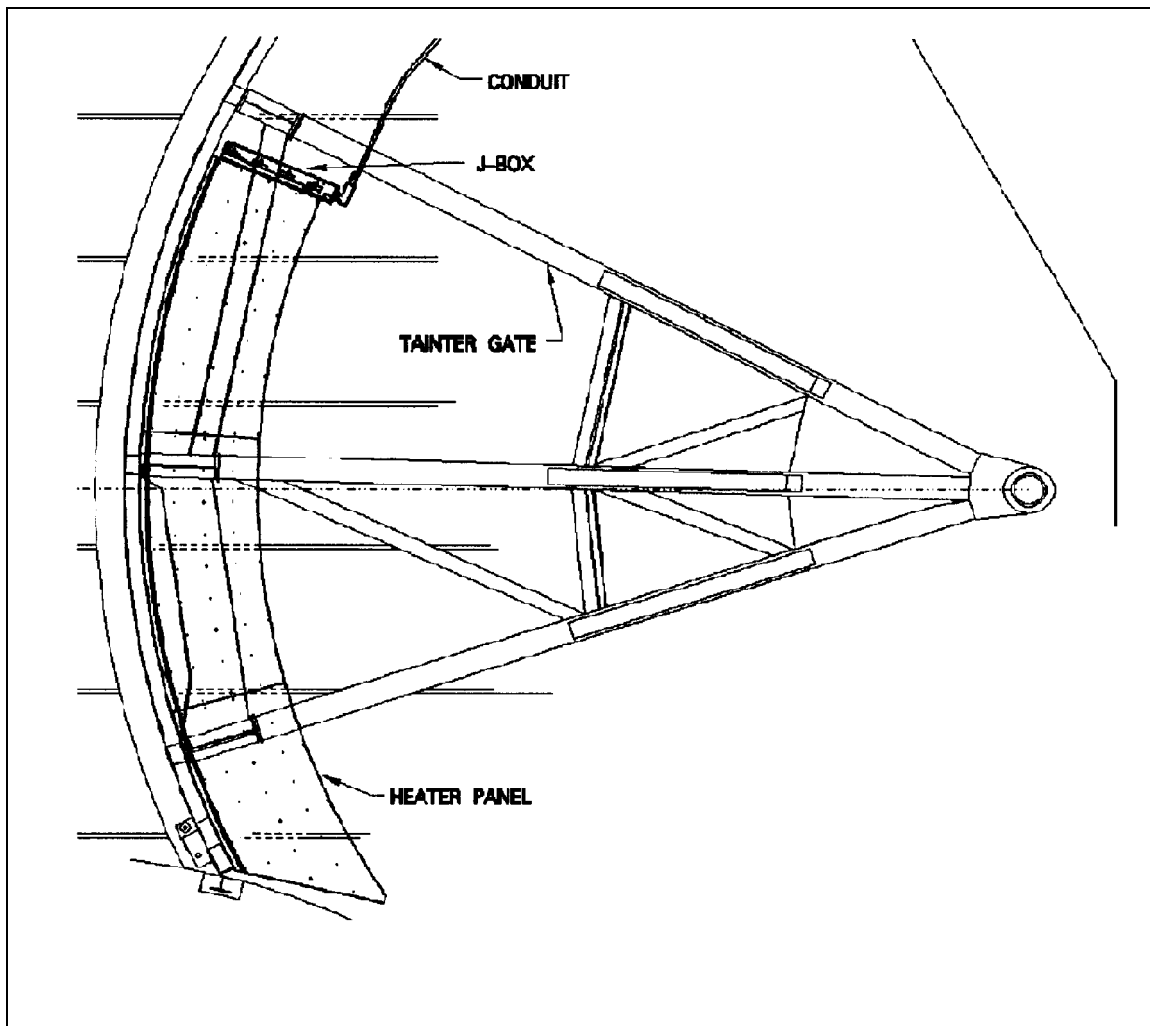


Figure I-1. Gate wall heaters

spillway gates at Gavins Point Dam. Provisions would be required to station the operator close to the ice as the water cools at a rate of about 2° F per ft after leaving the nozzle, and a narrow stream is required for cutting ice. The deicing equipment could also be installed on a truck without the boom and personnel basket, or on a trailer, or be designed for installation at a permanent location.

I-3. Cold Regions Research And Engineering Laboratory (CRREL)

Among some of the possibilities for deicing are side panel heaters, bubbler systems, steam boilers, high

density polyethylene cladding, and vibrators. CRREL has done some work on gate deicing and should have advice on most of these options. For information contact:

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